Support networks before and after retirement

van Tilburg, T.G.

published in
Journal of Social and Personal Relationships
1992

DOI (link to publisher)
10.1177/0265407592093006

document version
Publisher's PDF, also known as Version of record

SUPPORT NETWORKS BEFORE AND AFTER RETIREMENT

Theo van Tilburg
Vrije Universiteit Amsterdam, The Netherlands

Changes in one's personal network can be expected to follow after retirement. A certain loss of relationships, for example with colleagues, is inevitable. How do people who are either about to retire or have recently done so react to this life event? Do they form new relationships or deepen their existing ones? Which type of relationships are most likely to be terminated? Is overbenefiting or underbenefiting in support a significant aspect in the termination of relationships? This article addresses these questions on how retirement affects support networks. The data were obtained from 50 men, interviewed before and after retirement. At T_2 approximately a third of the personal relationships were no longer part of the network. The average size of the networks had not changed. A larger proportion of network members was unemployed and most of the relationships with colleagues were terminated. The relationships were evaluated as being more pleasant and the frequency of the contact was higher. On average, the relationships at T_2 were with older persons and tended to be more frequently with an acquaintance than those at T_1. More exchanges were carried out at T_2 than at T_1. They were mainly exchanges in which support was given by the respondents to network members, so that there was a small reduction in the overall reciprocity. The results confirm the hypothesis concerning the significance of reciprocity for the stability of exchange relationships.

Personal networks constantly undergo change. Certain individuals leave a network, others enter it. The type of relationship can change, for example a formal business relationship can turn into a friendship. The structure of the network can change: a network can become larger, for example, or less reciprocal. If there are

The study was made possible by a fellowship from the Royal Netherlands Academy of Arts and Sciences (KNAW). The author gratefully acknowledges Eric van Sonderen and Johan Ormel (Rijksuniversiteit Groningen, The Netherlands) for their willingness to make the data available. Address correspondence to: Theo van Tilburg, Department of Social Research Methodology, Vrije Universiteit Amsterdam, Koningslaan 22, Amsterdam 1075 AD, Netherlands.

Journal of Social and Personal Relationships (SAGE, London, Newbury Park and New Delhi), Vol. 9 (1992), 433–445

fewer intragenerational relationships and more intergenerational ones, for example with children, the composition of the network exhibits less homophily. The functional network content (received and given support) can fluctuate in intensity.

In the normal course of a lifetime, these changes continually take place and are in part independent of each other. If a relationship with a certain network member is terminated and is replaced by a relationship with equivalent characteristics, then the characteristics of the network as a whole, for example its size, remain stable. The characteristics of a network as a whole, e.g. supportiveness or reciprocity, can also change without altering the membership of specific persons.

In this article, I focus on alterations in the support networks of older men just before and after retirement, devoting specific attention to changes in the reciprocity of support. These older men are interesting because there are widely differing ideas about the significance of retirement as it influences characteristics of the social network. Rosow (1985) assumes, for example, that the social world shrinks in the course of the retirement period. There is a reduction in work-related activities and social activities, including formal memberships in organizations of all kinds. This process continues after retirement and produces smaller networks. Others (Costa et al., 1985; House & Robbins, 1983) are of the opinion, however, that this is a stereotype and consequently presents an erroneous picture. Two studies showed that retirement has mixed effects. In a qualitative study Crawford (1971) distinguished between three types of adjustment: *re-engagement*, 29 men identified retirement with disengagement and prepared themselves to reengage in the family; *disengagement*, 50 men felt they were forced to withdraw themselves from roles and relationships; and *realignment*, 19 men were looking forward to retirement because they saw it as a time for extending their life in different directions in order to make their life more meaningful. Palmore et al. (1984) showed that certain activities increase and others decrease. They conclude that retirement does not usually change men's patterns of social activities much or at all. However, barely any empirical longitudinal research has been conducted on the changes in support networks before and after retirement. Consequently, my first research question is: What changes in the support network take place before and after retirement?

A second primary interest is in the reciprocity of the network

and is based on the assumption that a lack of reciprocity can endanger the continuation of a supportive relationship. This hypothesis can be derived from the central assumption of exchange and equity theories. Exchange and equity theories generally work from the assumption that interactions within personal relationships are guided by and directed toward the equitable exchange of valuable material or symbolic resources. In a relationship, one person might have a need that can be fulfilled by another person, and the other person might be willing and able to do so. If this action takes place without the intention of receiving a favour in return, there is what is referred to as a *communal relationship* (Clark, 1984). Communal relationships are often close relationships. If an action takes place with the intention of receiving some favour in return, either on a short-term or a long-term basis, it is referred to as an *exchange relationship*. In exchange relationships reciprocity and stability are closely associated (Uehara, 1990). The actual *interchange* consists of the giving of support by one person to the other person involved in the relationship. A definition of support that is in keeping with the proposed exchange approach is the one formulated by Shumaker & Brownell (1984: 13): 'Social support is an exchange of resources between at least two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient.'

From the perspective of exchange theory, in addition to the focus on the receiving of support, there should also be a focus on the giving of support within the relationship and on the proportional ratio between the giving and the receiving of support. The term mutuality or reciprocity is used in this connection. Following Gouldner (1960), I define reciprocity as the degree of equality or comparability, in a certain period of time, of supportive actions towards an individual and supportive actions by this individual.

From the view of underbenefited individuals, who give more support than they receive, the overbenefited, who receive more support than they give, are violating the norm of reciprocity (Gouldner, 1960). The trust that services will be returned in kind has been damaged. The absence of adequate services in return can mean the relationship is not being sufficiently maintained by the overbenefited person. This discourages the other person from giving support and the absence of essential interactions causes the

relationship to cease to exist. Two comments might be made here on these ideas. Firstly, relationships are not simply terminated without further ado. Obviously this holds true for relationships between parents and children and other communal relationships, but it also holds true if very few alternative relationships are available in which reciprocity is more likely to be achieved. Assuming that it is easier for younger people to enter into new relationships, elderly people are more apt to be in a situation where very few alternatives are available (Roberto, 1989). Secondly, even underbenefited relationships can be valuable because they may improve people's sense of independence when they are characterized by less receiving, or because the existence of the relationship itself may be rewarding (Roberto & Scott, 1984). The second research question therefore can be formulated as follows: Are non-reciprocal relationships, particularly the underbenefited, supportive ones (from the viewpoint of the respondent) less stable than reciprocal relationships?

Method

Data were used from one of the four samples of a research project conducted by van Sonderen (1991). The 50 respondents were scheduled to retire in a couple of months. Their ages ranged from 55 to 65 with a mean of 60.7, and 48 of them were married. They received a letter of introduction from the personnel manager at their company. Industrial firms as well as local government institutions participated (one company refused co-operation and one institution charged so much that the initial researchers withdrew). In a letter, the principal researchers outlined the study and asked the men to send their address and some information on current job status; 40 percent of the men responded. Next the researchers contacted the men, explained the study in greater detail and asked if they would take part in it; 87 percent of the men agreed to participate and were interviewed. This procedure was adopted to guarantee a maximum of privacy to the potential respondents. Two interviews were held, 1 year apart. The first measurement, in 1986, took place just before retirement. The second measurement, in 1987, took place after retirement. About half the total sample lived in Groningen, a city in the north of the Netherlands (population about 170,000). Most of the others came from small towns in the rural area surrounding Groningen. A few lived in small villages.

The data collection consisted of an interview and self-administered questionnaires that were either mailed to the subjects a week before and returned at the interview, or left behind at the interview and returned by mail. The interviewers were experienced and mainly female, aged 28–40. The interviews lasted approximately 3 hours. Most interviews were tape recorded. In the face-to-face interviews, data were collected on the following topics: network delineation and network member characteristics, self-esteem and support, loneliness, health, life stress and personality.

Network delineation by the exchange approach. Based on the research of Fischer (1982), eighteen name-eliciting questions about giving and receiving support were used (see for detailed information van Sonderen et al., 1990). They covered the following topics: taking care of the home, talking about work (problems), helping with household chores, talking about personal problems, consulting when making important decisions, borrowing a large sum of money or large things, caring for children, having coffee or drinks at home and birthday visiting. For all topics the respondents were asked whether the supportive action was directed from the network member to them, and whether the action was directed from the respondent to the network member. For example: 'Who takes care of your home, plants or pets when you are away?' and 'Whose home, plants or pets do you take care of when they are away?' Respondents were given the opportunity to mention as many people as they wished in response to each question. The interviewer recorded only the first ten names generated by each name-eliciting question.

Kinds of support. Six questions concern aspects of emotional support, eight concern aspects of instrumental support and four concern aspects of companionship. For each relationship the number of emotional and instrumental supportive actions and actions of companionship given and received is counted.

Operationalization of reciprocity. The number of positive inputs *received* from a network member was calculated by adding up the number of receiver exchange items where the network member was mentioned. The number of positive inputs *given* to a network member was calculated by adding up the number of provider exchange items where the network member was mentioned. Reciprocity was calculated as the number of inputs received minus the number of inputs given. Scores on this reciprocity variable ranged, theoretically, for each relationship from −9 (underbenefiting, i.e. giving more aspects of support than receiving) to +9 (overbenefiting, i.e. receiving more aspects of support than giving). A score of 0 indicates a reciprocal relationship. In addition, the reciprocity score was calculated for each kind of support, resulting in three support-specific reciprocity instruments. Total reciprocity is essentially a derivative of support-specific reciprocity in that the sum of emotional, instrumental and companionship reciprocity is equal to the score of total reciprocity.

Results

Table 1 shows network size, supportive actions and reciprocity at T_1 and T_2. The average size of the networks was equal on both measurement occasions and the correlation between the number of network members was high, indicating on average little change. The average number of supportive exchanges increased over time, as indicated by the number of network members who were mentioned by the respondents in response to the name-eliciting questions, regardless of whether they were the same or different ones. Emotionally and instrumentally supportive actions directed to the respondent by network members were mentioned as frequently at T_1 as at T_2, while the number of companionship actions

TABLE 1
Size of the network, aggregated average number of supportive actions in the relationships and reciprocity at T_1 and T_2; correlations between T_1 and T_2 ($n = 50$)

	Range	T_1	T_2	$t_{(98)}$	$p <$	r	$p <$
Size of the network	0–180	20.0	20.0	.1	NS	.67	.001
Average number of supportive actions per relationship	0–18	2.5	2.8	−2.6	.05	.43	.001
Emotional received	0–3	.3	.2	1.4	NS	.31	.05
Instrumental received	0–4	.1	.1	−.1	NS	.68	.001
Companionship received	0–2	.7	.8	−2.3	.05	.49	.001
Emotional given	0–3	.3	.5	−3.0	.01	.43	.001
Instrumental given	0–4	.2	.2	−1.9	.10	.57	.001
Companionship given	0–2	.7	.8	−1.8	.10	.48	.001
Reciprocity	−9–9	−.1	−.3	2.7	.01	.49	.001
Emotional	−3–3	−.1	−.2	4.1	.001	.07	NS
Instrumental	−4–4	−.0	−.1	1.8	.05	.54	.001
Companionship	−2–2	.0	.1	−.6	NS	.32	.05

increased. On the average, emotional, instrumental and companionship actions directed to network members by the respondent were mentioned more frequently at T_2 than at T_1. At T_1, the total reciprocity of the network was somewhat greater than at T_2; the emotional and instrumental reciprocity were higher at T_1 and the companionship reciprocity was equal.

Despite some fluctuations, the overall form, as indicated by size, and the overall function of the networks, as indicated by number of supportive exchanges and extent of reciprocity, remained quite stable. The composition of the networks, as indicated by the type of the relationships, changed slightly; the greatest change was for the colleagues, their relative number decreased by about 50 percent. The composition of the networks, as indicated by the unique persons actually named, changed dramatically: about one-third of the relationships were terminated. To examine the small differences between T_1 and T_2 in more detail and to answer the question why the particular relationships were terminated, in the following sections I view the relationships between the respondents and the network members as research units. A total of 1000 unique network members were referred to by the 50 respondents at T_1 and 1004 at T_2. I examine differences between the lost relationships (the outflow from the relationship network at T_1) and the continued relationships in order to understand why the lost relationships were terminated. Next I try to discover if the new relationships (the inflow into the relationship network at T_2) are equivalent to those who were lost.

Of the 1000 relationships referred to at T_1, 365 were lost. The

outflow in various partial networks varies (χ^2 (9) = 183.3, $p <$ .001): 4 percent of the relationships with the partner, 24 percent of the parents or parents-in-law, 3 percent of the children, 12 percent of the children-in-law, 38 percent of other relatives, 38 percent of friends (all non-coworkers), 24 percent of the neighbours, 51 percent of the acquaintances (all non-coworkers), 79 percent of the colleagues and 44 percent of the other parties were lost. The changes in the partial networks consisting of relationships with the partner, parents or parents-in-law and children or children-in-law were small in an absolute sense. The changes could have been caused by very different, specific events, such as the death of a network member. The changes in the remaining partial networks of other relatives, friends, neighbours, acquaintances, colleagues or other parties are larger in magnitude and of greater interest. As was noted in the introduction, these relationships particularly demonstrate an association between relationship characteristics like reciprocity and the stability of the relationship.

What factors affect the chance that a relationship that was referred to at T_1 and is part of a partial network of other relatives, friends, neighbours, acquaintances, colleagues or other parties will also be mentioned at T_2? The results of a logistic regression analysis (Table 2) show that several characteristics of the relationships were important in continuing the relationship over time: the more frequently a person was referred to in response to exchange questions, the greater the chance of that person's being mentioned at T_2 as well. In addition, relationships with other relatives and neighbours were mentioned more frequently at T_2 than relationships with friends, acquaintances and other parties, while relationships with colleagues were mentioned less frequently. It also became clear that relationships with a relatively high frequency of contact had a greater chance of being mentioned at T_2. The reciprocity within the relationship was another relevant factor: when the relationship was reciprocal and/or more underbenefiting, the chance of continuation was greater. It was not important what was the gender or the age of the persons referred to, whether or not they were employed or how pleasant the respondent felt the relationship was.

The inflow of new relationships mainly consisted of persons mentioned in response to one or two exchange questions. However, on average, the network members new at T_2 were referred to in response to more exchange questions than were the lost

TABLE 2
Logistic regression on lost and continued relationships at T_1 ($n = 597$) and on lost and new relationships ($n = 450$)

	0 = lost, 1 = continued			0 = lost, 1 = new		
	Wald	$p <$	Exp(B)	Wald	$p <$	Exp(B)
Category of network member	38.5	.001		25.3	.001	
Other relative	12.9	.001	2.1	2.1	NS	.7
Friend	.3	NS	1.1	.0	NS	1.0
Neighbour	4.0	.05	1.7	.1	NS	1.1
Acquaintance	.0	NS	1.0	4.5	.05	1.6
(Ex-)colleague	26.4	.001	.1	15.4	.001	.3
Age of network member	.1	NS	1.0	4.2	.05	.9
Gender of network member (female, male)	.0	NS	1.0	.0	NS	1.0
Network member employed (no/yes)	.6	NS	.8	7.5	.01	.5
Pleasantness (1 = not–5 = very)	.8	NS	1.2	10.4	.01	1.8
Frequency of contact (1 = yearly–6 = daily)	23.0	.001	1.4	11.8	.001	1.3
Number of supportive exchanges (0–18)	37.7	.001	1.8	.2	NS	1.0
Underbenefited–reciprocal–overbenefited (−9–9)	6.8	.01	.8	2.8	NS	.8
Reciprocal (no/yes)	6.7	.01	1.8	.1	NS	1.1

Note: The highest correlation between the independent variables can be found for the association between age and employment status (respectively −.51 and −.56); the correlation between the two reciprocity variables is .03 and −.02.

network members at T_1 ($\bar{X}$ for the lost relationships was 1.46 and for the new relationships it was 1.60; $t\ (709) = -2.0, p < .05$).

A logistic regression analysis (Table 2) showed that with respect to various characteristics of the relationships or of the persons referred to, there were differences between the outflow from the relationship network at T_1, and the inflow into the relationship network at T_2. There were more relationships with acquaintances in the inflow and less with colleagues. The relationships of the inflow were more frequently evaluated by the respondent as being pleasant, the relationships were less frequently with employed persons and the frequency of the contact was higher.

Discussion

The result of this study can be summarized as follows. There were changes in the form of the networks: although the size remains quite stable, the composition of the network changes dramatically. A lot of relationships, especially those with colleagues, were terminated. Next, the function of the networks undergo changes:

more support was given and the reciprocity of the networks decreased. Furthermore, the results showed that reciprocity of support is a factor in the continuation of relationships: reciprocal relationships had a greater chance of continuation and the more overbenefited relationships were more often terminated than the more underbenefiting relationships.

The results emphasize the importance of the description of the relationship network formulated by Kahn & Antonucci (1981). A network can be viewed as consisting of various circles. The centre of the network (the innermost circles) contains close non-role-related relationships in which intensive support is exchanged. In the course of a lifetime, the network nucleus often remains stable (Costa et al., 1985). The periphery of the network (the outermost circles) often contains role-related relationships in which very few exchanges take place. The data of our study showed that the nuclei of the networks were extremely stable and the peripheries extremely unstable, if we consider the size of the outflow and inflow over a period of 1 year.

The relatively extensive outflow from the network periphery and inflow into the network periphery coincide with the notion of a convoy of relationships that accompanies people throughout their lifetime (Kahn & Antonucci, 1981). Certain relationships cease to exist, others come into existence, depending in part on the life changes of the individuals involved. The retirement of the respondents that took place between the two testing situations might have been the reason why they more or less deliberately changed their networks and adjusted them to their altered circumstances and needs, e.g. a new structure as regards how they spent their time and the replacement of the social contacts they had lost (van Gelder et al., 1979). The clearest indication of this was the decrease in relationships with (ex-)colleagues and in the number of people who were employed. The fact that they now had so much more leisure time, perhaps combined with the desire not to alter excessively the daytime schedule of their partner, accounted for their coming into contact more and more with other people who were also free in the daytime. There can also have been a deliberate effort to establish relationships with a greater extent of homophily. However, these hypotheses must be tested in new research among retirees and a control group of other aged people.

The changes in the composition of the network could also have been due in part to the identification procedure that was utilized.

A relatively large number of the relationships were identified by the four questions pertaining to companionship: the people who the respondent had visited or who had visited the respondent in the past few months to have a cup of coffee or tea or to celebrate a birthday. For these questions, often the maximum of ten persons (set by the principal researchers) was reached. Whether a person is referred to again a year later in response to one of these questions is thus relatively arbitrary, meaning that the method is unreliable.

Although the terminated relationships were less reciprocal than the continued relationships, the data presented exhibit a clear tendency of decreasing reciprocity in the networks with respect to emotional and instrumental support, predominantly caused by an increase in the support given by the respondents to other members of their network. This finding partly contradicts the common notion as to the significance of reciprocity for the stability of exchange relationships. As was noted in the introduction, a non-reciprocal relationship network can be expected to lead to discontentment, which is why people are expected to change their non-reciprocal relationships, particularly the underbenefiting ones, into reciprocal relationships or to replace them with relationships that are reciprocal. In the case of this small sample of men before and after retirement, however, the last step in this hypothesis, replacing non-reciprocal relationships by reciprocal ones, was not confirmed. In a previous study (van Tilburg et al., 1991) using the data from T_1, contrary to the theoretical expectations and to the results as regards two other samples (pregnant women and recent movers), it was found that having a reciprocal relationship network was associated with greater loneliness. It is conceivable that this was a spurious association. The tendency noted for networks to change into networks with more underbenefited relationships on average does not exhibit any direct association with the extent of well-being on the part of the retirees, but can be viewed as the result of activities on the part of people who want to find a new way of spending and structuring their time in a new stage of their life (O'Brien, 1985). It is also possible that, in keeping with the notion of a social support bank (Antonucci et al., 1990), men invest in relationships in the hope that this investment will be paid back when they are older and in need of support but are no longer able to give much support, or that they invest to reinforce self-reliance in order to compensate for the loss of employment as a source of self-reliance.

In this exploratory study, however, it was not possible to examine the motives and the intensity of the exchange or communal orientation of the men, though it is our intention to do so in a future study. This study will have to be conducted over a period longer than 1 year. There are indications that the negative effects of retirement do not become visible until several years later. Murrell et al. (1988: 112) formulated the following disenchantment hypothesis: 'the period immediately after retirement is a "honeymoon" period in which the new freedom and the change are perceived as exciting and positive, but this is followed by a period in which the negative consequences are felt more keenly, and dissatisfaction and disappointment become strong.'

The validity of the method that was used in this study to measure the reciprocity is not undisputed. Each of the nine exchange questions asking who gave support to the respondent immediately preceded the reversed question asking who received the same type of support from the respondent. When receiving and giving social support is measured by means of these questions, it is possible that the answers to the preceding questions about receiving support evoke or reinforce a norm that the respondents adhere to in answering the questions about giving support. This sequence-effect is known as 'reference-group effect' (Molenaar, 1990), and respondents may be guided by a norm of reciprocity (Gouldner, 1960). According to this norm, there is a culturally defined tendency to view relationships as equitable. As a result, there may be a higher degree of overlap between the names mentioned in response to equivalent questions on received and given support than there is in actuality. In this study, predominantly reciprocal or almost reciprocal relationships were noted, and this makes one wonder whether the method that was used to measure the giving and receiving of support might not have led to an overestimation of reciprocity. A study is now being conducted to examine whether a different extent of reciprocity is noted if the pairs of questions immediately follow each other than if the entire set of questions on receiving support precedes the entire set of reversed questions on giving support.

REFERENCES

Antonucci, T.C., Fuhrer, R. & Jackson, J.S. (1990) 'Social Support and Recipro-

city: A Cross-ethnic and Cross-national Perspective', *Journal of Social and Personal Relationships* 7: 519–30.

Clark, M.S. (1984) 'Record Keeping in Two Types of Relationships', *Journal of Personality and Social Psychology* 47: 549–57.

Costa, P.T., Zonderman, A.B. & McCrae, R.R. (1985) 'Longitudinal Course of Social Support among Men in the Baltimore Longitudinal Study of Aging', in I.G. Sarason & B.R. Sarason (eds) *Social Support: Theory, Research and Applications*, pp. 137–54. Dordrecht: Martinus Nijhoff.

Crawford, M. (1971) 'Retirement and Disengagement', *Human Relations* 24: 255–78.

Fischer, C.S. (1982) *To Dwell among Friends: Personal Networks in Town and City*. Chicago, IL: University of Chicago Press.

Gouldner, A.W. (1960) 'The Norm of Reciprocity: A Preliminary Statement', *American Sociological Review* 25: 161–79.

House, J.S. & Robbins, C. (1983) 'Age, Psychological Stress, and Health', in M.W. Riley, B.B. Hess & K. Bond (eds) *Aging in Society: Selected Reviews of Recent Research*. Hillsdale, NJ: Erlbaum.

Kahn, R.L. & Antonucci, T.C. (1981) 'Convoys of Social Support: A Life Course Approach', in S.B. Kiesler, J.N. Morgan & V.K. Oppenheimer (eds) *Aging: Social Change*, pp. 383–405. New York: Academic Press.

Molenaar, N.J. (1990) 'Survey Questioning: An Overview of Recent Methodological Studies', *Kwantitatieve Methoden* 11: 137–59.

Murrell, S.A., Norris, F.H. & Grote, C. (1988) 'Life Events in Older Adults', in L.H. Cohen (ed.) *Life Events and Psychological Functioning: Theoretical and Methodological Issues*, pp. 96–122. London: Sage.

O'Brien, J.E. (1985) 'Network Analysis of Mid-life Transitions: A Hypothesis on Phases of Change in Microstructures', in W.A. Peterson & J. Quadagno (eds) *Social Bonds in Later Life: Aging and Interdependence*, pp. 143–64. London: Sage.

Palmore, E.B., Fillenbaum, G.G. & George, L.K. (1984) 'Consequences of Retirement', *Journal of Gerontology* 39: 109–16.

Roberto, K.A. (1989) 'Exchange and Equity in Friendships', in R.G. Adams & R. Blieszner (eds) *Older Adult Friendship: Structure and Process*, pp. 147–65. London: Sage.

Roberto, K.A. & Scott, J. (1984) 'Friendship Patterns among Older Adults', *International Journal of Aging and Human Development* 19: 1–10.

Rosow, I. (1985) 'Status and Role Change through the Life Cycle', in R.H. Binstock & E. Shanas (eds) *Handbook of Aging and the Social Sciences*, 2nd edn, pp. 62–93. New York: Van Nostrand Reinhold.

Shumaker, S.A. & Brownell, A. (1984) 'Toward a Theory of Social Support: Closing Conceptual Gaps', *Journal of Social Issues* 40(4): 11–36.

Uehara, E. (1990) 'Dual Exchange Theory, Social Networks, and Informal Social Support', *American Journal of Sociology* 96: 521–57.

van Gelder, W., Konings, P.G. & Vansant, B. (eds) (1979) *Voorbereiding op de pensionering* (Preparing Retirement). Alphen aan den Rijn, The Netherlands: Samson.

van Sonderen, F.L.P. (1991) 'Het meten van sociale steun' (The Measurement of Social Support), unpublished doctoral dissertation, Rijksuniversiteit Groningen, The Netherlands.

van Sonderen, F.L.P., Ormel, J., Brilman, E.I. & van Linden van den Heuvell, G.F.E.C. (1990) 'Personal Network Delineation: A Comparison of the Exchange, Affective and Role Relation Approach', in C.P.M. Knipscheer & T.C. Antonucci (eds) *Social Network Research: Substantive Issues and Methodological Questions*, pp. 101–20. Lisse, The Netherlands: Swets & Zeitlinger.

van Tilburg, T.G., van Sonderen, F.L.P. & Ormel, J. (1991) 'The Measurement of Reciprocity in Ego-centered Networks of Personal Relationships: A Comparison of Different Indices', *Social Psychology Quarterly* 54: 55–66.